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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/721,697	11/25/2003	Allan P. Thompson	2507-5776.2US (21595-US-0)	6301
66794 7590 10/17/2008 TRASKBRITT, P.C./ ALLIANT TECH SYSTEMS P.O. BOX 2550 SALT LAKE CITY, UT 84110				
EXAMINER THOMPSON, CAMIE S				
ART UNIT		PAPER NUMBER		
1794				
NOTIFICATION DATE		DELIVERY MODE		
10/17/2008		ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

USPTOMail@traskbritt.com

Office Action Summary

Application No.

10/721,697

Applicant(s)

THOMPSON ET AL.

Examiner

Camie S. Thompson

Art Unit

1794

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Amendment filed 6/30/08.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6, 8 and 11-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6, 8 and 11-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SF-08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. Applicant's amendment and accompanying remarks filed June 30, 2008 are acknowledged.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 3-6, 8 and 13-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Klett et al., U.S. Patent Number 5,744,075.

Klett discloses a fibrous preform wherein the preform comprises carbon fibers that can be rayon or polyacrylonitrile fibers (see reference claims 1 and 3). Additionally, the reference discloses that the preform comprises carbonizable organic powder (see reference claim 1). Klett discloses that the matrix material is a phenolic resin (see column 4, lines 4-8). Also, the Klett reference discloses that the fibrous preform has a density of 1.0 g/ml. The carbonizable powder affects the density of the fibrous pre-form. The material taught by Klett et al. will function in the claimed environment and could be used for a "rocket nozzle". Klett et al. teaches a pre-preg material which has densities in the claimed range. The term "rocket nozzle" is intended use and does not "breath life and meaning" into the claims.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-6, 8 and 11-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Herring, U.S. Patent Number 4,504,532 in view of Klett et al., U.S. Patent Number 5,744,075.

Herring discloses composites for rocket motors that comprise rigid, low density bodies that comprise inorganic particulate and fibrous reinforcement in a phenolic resin as per instant claims 1-3, 11-13 and 15 (see column 2, lines 1-13). Additionally, the reference discloses that the fibrous reinforcement can be selected from carbon fibers or polyaramide fibers or pulp as per instant claims 4-6 (see column 2). Table II of the reference discloses the tensile strength of the low density bodies as per instant claims 11-12. Herring discloses that the density of the composite bodies is 0.050-0.570 pounds per cubic inch (1.38-1.57 g/ml). Although Herring does not disclose the same specific density as the present claims, Herring does disclose that the composite bodies have low density. The lower density provides a better char rate. Additionally, Herring does not disclose a filler material such as carbon powder, powdered aluminum trihydrate or antimony oxide.

Klett discloses a fibrous preform wherein the preform comprises carbon fibers that can be rayon or polyacrylonitrile fibers (see reference claims 1 and 3). Additionally, the reference discloses that the preform comprises carbonizable organic powder (see reference claim 1). Klett discloses that the matrix material is a phenolic resin (see column 4, lines 4-8). Also, the Klett

reference discloses that the fibrous preform has a density of 1.0 g/ml. The carbonizable powder affects the density of the fibrous pre-form. Also, Klett is used for various molded structures including heat shields.

Therefore, it would have been obvious to one of ordinary skill in the art to use carbonizable powder in the Herring reference in order to obtain a density of 1.00 to 1.15 g/ml for the composite body for a rocket motor that has better performance and is rigid. The lower density would make it advantageous for flight applications as additional weight needs additional fuel for propulsion. Although neither Herring nor Klett disclose the carbon performs as components of a rocket nozzle, the combination of Herring and Klett meet all the limitations required by the present claims. Since the reference teaches the components as claimed, the resulting composite article would be capable of being configured as at least a component of a rocket nozzle.

Response to Arguments

6. Applicant's arguments filed June 30, 2008 have been fully considered but they are not persuasive.
7. Applicant argues that Herring teaches phenolic insulators for blast tubes for rocket motors. Applicant argues that present claim 1 recites a rocket nozzle comprising a pre-preg material comprising a reinforcement impregnated with a thermosetting resin, the rocket nozzle component having a specific density ranging from approximately 1.00 g/ml to approximately 1.15 g/ml.

8. Applicant argues that Herring and Klett do not teach or suggest the limitations of a “rocket nozzle component”. Herring and Klett both disclose carbon preforms with phenolic resin. Herring discloses low density composite bodies comprising fibrous reinforcement (carbon or organic fibers) in phenolic resin. Herring discloses that the low density composite bodies are used in the rocket industry. Klett discloses a low density carbon fibrous reinforcement in phenolic resin wherein the density is 1.0 g/ml. The combination of the Herring and Klett reference meet all the limitations required by the present claims. Both Herring and Klett are analogous art. Both Herring and Klett discloses composite bodies for molded parts. Herring discloses that the low density composite bodies are used in the rocket industry. Since both reference combined teach the components as claimed, the resulting composite article would be capable of being configured as at least a component of a rocket nozzle. The Herring reference discloses that low density carbon preforms can be used in the rocket industry. Klett was brought in to demonstrate the specific density of carbon reinforcements in phenolic resins. Klett discloses that the carbon reinforcements in phenolic resin can be as structural composite materials. Both Herring and Klett disclose that the composite materials (bodies) are rigid. The specific density of the Klett reference demonstrates that the composite material is rigid. The combination is not without motivation.

Conclusion

Any inquiry concerning this communication or earlier communication from the examiner should be directed to Camie S. Thompson whose telephone number is (571) 272-1530. The examiner can normally be reached on Monday through Friday from 7:30 am to 4:00 pm. If

attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, D. Lawrence Tarazano, can be reached at (571) 272-1515. The fax phone number for the Group is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/C. S. T./
Examiner, Art Unit 1794

/D. Lawrence Tarazano/
Supervisory Patent Examiner, Art Unit 1794